

**The Effect of Tsunami  
Relief Policy on  
Poverty Levels in  
Indonesia and Sri Lanka**

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## **I. Introduction**

On December 24, 2004, an earthquake of magnitude 9.0 on the Richter scale struck off the northern Indonesian island of Sumatra in the Indian Ocean. The most powerful earthquake worldwide since 1964 created tsunamis rising up to ten meters high. Furthermore, in the following days aftershocks ranging from 6.3 to 7.0 on the Richter scale were recorded in the vicinity of the original epicenter (UN, 2005). The Indonesian province of Aceh suffered the brunt of the destruction along with parts of coastal Sri Lanka. The United Nations estimated the death toll at 230,000 with roughly 2 million being displaced from their homes (UN, 2009).

In light of the 2004 tsunami and the recent earthquake in Haiti this paper will seek to explore the relationship between large scale natural disasters, the respective responses and policy initiatives, and the effect on poverty levels experienced by the afflicted regions. The paper will focus on Indonesia and Sri Lanka because these countries suffered the greatest loss of life and experienced the greatest economic damage as a result of the tsunami. In order to study economic changes following the tsunami, a summary of economic history for both countries leading up to the disaster will be vital. The paper will then attempt to quantify the size of the disaster and the amount of economic damage done to the respective countries. Because Indonesia consists of many islands the paper will focus mainly on the Aceh territory on the island of Sumatra. Next, the paper will explore the various types of foreign aid that the countries received as well as the methods by which the aid was employed. It is one of the major suppositions of the paper that different aid employment strategies have caused varying degrees of economic revitalization and poverty relief. Finally, the effectiveness of different policy responses will be assessed based on a comparison of economic growth in the affected regions in the five years following the tsunami. Several growth and poverty metrics will be used to study the varying degrees of recovery that the

countries experienced. The paper concludes that the early response was basically a success except for the misallocation of aid items in some areas. The long-term reconstruction effort is ongoing and has been viewed positively by several agencies and donor nations; however, the effort has been hindered by uncertain funding streams. Several policy suggestions will be presented in an effort to curtail these shortcomings in disaster relief.

## **II. Political and Economic history of Indonesia and Sri Lanka leading up to the tsunami**

### **A. Indonesia**

Shortly after the end of the Cold War, the Indonesian government declared a policy of social liberalism entitled 'Openness'. Previous laws that had restricted foreign investment, particularly the purchase of land, were repealed, and in response the country was showered with money from international investors. Prior to this liberalization, the government was the instigator for a great deal of the country's economic activity. As the real estate market attracted large investments from abroad the government's influence shifted away from the economic realm and began to focus on intervention in the various social mediums (Vickers, 2005).

As foreign investment continued to intensify throughout the 1990s, national poverty levels declined. The effect was particularly noticeable in urban areas where the middle class began to form a strong economic force. Unfortunately for the millions living in rural areas poverty relief would not be so imminent. The real estate boom of the 1990s saw the creation of shopping malls and high rise office buildings, but most rural parts of the country remained relics of the past where agriculture comprised the dominant majority of economic activity (Vickers, 2005).

Unsurprisingly, the lag in development experienced by rural citizens created an increase in income inequality. The gap between the rich and the poor could just as easily be characterized as a gap between the rural and urban. Overall, poverty levels declined as the proportion of employed people living below \$1 (PPP) per day was 43% in 1996, down from 54% in 1993 (UN, 2009). However, this decrease is due almost entirely to the rise of the manufacturing sector throughout the 1990s. Growth in sectors tied to urban areas was spurred by the increase in Indonesia's exporting power throughout the decade.

The Asian Financial Crisis of 1997 wreaked a massive amount of havoc on the Indonesian economy and altered its financial landscape. Many of the investments undertaken prior to 1997 were funded by foreign loans, which were bought up by speculators across the world. Thailand was the first Asian country to experience a massive capital outflow, but Indonesia would see its investors pull out shortly thereafter. The Indonesian Rupiah declined by 80% relative to the dollar. The International Monetary Fund provided a total of \$43 billion in assistance on the condition that the Indonesian government would reform the financial system, patrol monopolies, and create social safety nets for the poorest citizens (Vickers, 2005).

The financial crisis destroyed much of the wealth that had been created in Indonesia since 1990. Sixteen banks failed in the months following the crisis, and in the process a large amount of savings was lost. The middle class drastically decreased in size as many were relegated back into the state of poverty that their parents had known. The national poverty level doubled in the two years following the crisis. Furthermore, it is estimated that wages declined by up to 40% nationwide, so many were never able to recover from the losses they had incurred (Vickers, 2005).

The territory of Aceh on the island of Sumatra bore the brunt of the damage caused by the tsunami. Its history is rather intricate, and it has been subject to much instability over the past thirty years. Beginning in 1976, the Free Aceh Movement sought to gain Acehnese independence from Indonesia on the grounds of historical mistreatment. When Indonesia was formed in 1949, rebels proclaimed that Aceh was not subject to the Dutch rule that had previously presided over Indonesia. The rebels argued that Aceh should have been bestowed the status of a sovereign state (BBC, 2005b). The movement continued until 2005, when rebel leaders agreed to sign a cease fire. Prior to the tsunami, foreigners had largely been forbidden to enter Aceh, but the inflow of reporters and aid workers exploded after the disaster. It appears that the need for cooperation in the aftermath of the tsunami aided the peace effort in Aceh.

Economic conditions in Aceh have remained bleak for the past thirty years. Prior to the tsunami the people of Aceh were largely trapped in poverty. The constant political and social unrest has halted economic progress and made any significant growth or poverty reduction impossible. Perhaps even more disheartening is the fact that these poor did not receive the worldwide media coverage and attention that many of the African nations have. Accurate poverty statistics are not even available for Aceh prior to the tsunami, and it would be fruitless to extrapolate any conclusion from the broader Indonesian poverty data.

## **B. Sri Lanka**

Sri Lanka has generally been characterized by militant violence since 1983 when the Liberation Tigers of Tamil Eelam (LTTE) began waging war on the government. The civil war erupted over longstanding and unaddressed ethnic animosity between the Sinhalese and the Tamils. The initial fighting began in 1983 and continued for the rest of the decade. The early 1990's saw a brief ease in the fighting, but violence exploded to new heights in 1995. The war

would not end until May 2009, when the Sri Lankan military was able to kill several key members of the LTTE and reclaim all disputed territory (Winslow & Woost, 2004).

The years of conflict greatly disturbed economic activity throughout the nation, especially in the northern part of the island. Perhaps the greatest cost of the war came in terms of foreign investment. Between 1994 and 2000, foreign investment accounted for less than 4.5% of GDP. This came at a time, in the early 1990s, when other South Asian countries were enjoying massive capital inflows. Furthermore, government spending on the war restricted the amount of capital that could be employed to build economic infrastructure and bolster growth. Wartime spending also served to create inflation, which averaged 13.1% from 1990 to 1994, and rose to 15.9% in 1996 (Winslow & Woost, 2004).

Throughout the civil war, the economy managed to grow on the aggregate as the government was able to stimulate some growth, mostly in the southern urban areas. The 1980s saw average GDP growth of 4.2% annually, while the 1990s saw GDP growth average 5.2% annually (Winslow & Woost, 2004). Poverty, however, remained a problem of mass proportion. As of 1994, roughly 23% of the population lived below the poverty line. Sri Lanka's poverty breakdown did not see much variation across rural and urban divides during the mid-1990s, with the urban poverty level only slightly better than the national level at 18% (Kelegama, 2006).

### **III. The Tsunami and the Subsequent Aid Effort**

The initial physical damage done by the tsunami was immense and far-reaching, and the death toll was staggering. According to the World Bank, it is estimated that over 56,000 people were killed in Aceh, while the number dead exceeded 35,000 in Sri Lanka. While the physical damage from the disaster cannot be known in dollar terms with much accuracy, the effect on

certain industries was apparent. Destruction along the coastlines of both Aceh and Sri Lanka was staggering. The fishing industry, long a stalwart in both economies, was all but wiped out as nearly every boat was destroyed. Many fishermen living along the coast were killed, and the industry has yet to recover fully. In the years prior to the tsunami, Aceh had consistently been a net exporter of fish. Since 2005, the Acehnese people have relied rather heavily on imported food, and fish exports have virtually ceased (World Bank, 2007). In Sri Lanka the fate of the fishing industry was similar, and in the years since a lack of aid to small-scale fishermen has forced many to relocate. This pattern has given rise to urban slums on the outskirts of several coastal cities (Klein, 2007).

Shortly after the tsunami hit the World Bank estimated that \$5 billion in aid would be necessary. Within four days of the disaster roughly \$1.8 billion in aid had been pledged by various governments and humanitarian organizations. In the following weeks this number swelled to roughly \$6.25 billion as the true damage was realized. The United States' donations totaled an estimated \$3 billion without accounting for corporate donations. Of this, \$400 million came in the form of a direct government transfer to the governments of India, Indonesia, the Maldives, and Sri Lanka. An additional \$20 million line of credit was also offered to these governments. The United States provided \$950 million in the form of humanitarian aid for the purchase of food, water, and other supplies (Office of U.S. Foreign Disaster Assistance, 2005). Contribution from non-governmental organizations totaled \$1.8 billion (*U.S. Organizations Providing Tsunami Relief*, The Center on Philanthropy at Indiana University). The remainder of aid from the United States originated in the private sector, where cash donations totaled an estimated \$515 million. Supplies contributed by various pharmaceutical and communication companies accounted for an estimated \$40 million.

Direct aid from other governments totaled \$1.8 billion, and of this Japan contributed the largest share equal to \$500 million. Like the United States, the other government contributions generally took the form of direct government transfers. Cumulatively, the aid effort proved to be a truly global undertaking as over forty governments made similar, direct transfers to the affected countries. Worldwide contributions from individuals and the private sector, excluding those based in the United States, amounted to roughly \$2 billion (OCHA, 2010b).

#### **IV. Aid Employment Strategies**

In the days following the tsunami many nations made aid pledges before the United Nations assembled the infrastructure through which the funds could be allocated. The earliest responses consisted of various countries acting individually by sending naval warships and airlifting aid workers and supplies. This method created several international relations spats such as in the case where Sri Lanka refused aid from Israel on the grounds that Israeli soldiers would be deployed to distribute necessities. World leaders seemed to realize that individual nations acting at their own discretion was not a viable solution, and in response Australia, India, Japan, United States formed a coalition led by Pakistan that would be responsible for managing aid relief funds (BBC, 2005c). However, at the Jakarta Summit on January 6, 2005, the coalition decided that an international agency would be better suited to manage the relief effort, and consequently the United Nations was named overseer. As is standard operating procedure for the UN, the Office for the Coordination of Humanitarian Affairs (OCHA) was named the directing institution for the relief effort (Bennett et al., 2006).

The private sector contributed a great deal to the relief effort, and most non-governmental organizations (NGO's) and charitable organizations were responsible for allocating their



contributions without much UN consultation. These organizations gave substantial sums of money, but the aid workers that these groups lent to the relief effort proved to be equally important. A precise estimate of the number of volunteers cannot be provided, but the variety of services rendered was comprehensive and ranged from nurses assisting pregnant mothers to forensic workers identifying dead bodies. By many accounts, funds from NGO's were deployed rather quickly and relatively effectively. A large amount of these funds were spent on immediate necessities to assist displaced, wounded, and hungry survivors.

As funding poured in, providing necessities quickly became the main focus of the relief effort in the days following the disaster. With more than 2 million people displaced from their homes it became vital for relief agencies to provide food, water, shelter, blankets and basic medicines. The logistics behind such large-scale relief efforts are highly complex and require the use of various types of cargo carriers. Helicopters became popular because of their versatility and ability to land in remote locations. Cargo planes and trucks were used in regions that contained the proper infrastructure as these carriers could transport much larger loads than helicopters. Due to extensive damage to the air traffic control infrastructure the use of cargo planes was initially restricted. The tsunami had destroyed many of the coastal roads and bridges in Indonesia and Sri Lanka, so trucks were also limited until some repairs could be made (BBC, *Asia Quake Relief Effort*). Furthermore, early response aid workers had to beware of hostilities from militant groups in both countries.

In total \$174 million was spent on a wide range of medicines and various treatments, \$230 million was spent on food, and \$98 million was spent on water and sanitation. Although a large percentage of these expenditures came in the first month after the disaster, the cost of the early response cannot be known with accuracy because some of the costs were spread out over

several years (OCHA, 2010a). The early responders in Indonesia were generally navy vessels sent by various countries, most notably India and the United States. Initially, Sri Lanka was assisted by way of helicopters airlifting supplies to coastal towns. Israel was among the first responders to Sri Lanka and delivered necessities by helicopter, presumably because many of the seaports were inaccessible due to damage sustained by the tsunami. An assessment of the early relief effort by the UN-sponsored Tsunami Evaluation Committee (TEC) praised the early responders.

The role of foreign and national military forces was pivotal in the acute emergency period in providing logistical support...The studies of the TEC have found that the relief phase was effective in ensuring that immediate survival needs were met, due to the mixture of local assistance in the immediate aftermath and international assistance in the first weeks after the disaster (Bennett et al., 2006).

While the media noted the mass suffering in the days and weeks following the disaster, a substantial percentage of the basic aid needs were met during this timeframe. The early response should generally be applauded.

However, the early response was not without logistical problems that created inefficient responses in some places. Much of the initial humanitarian aid was administered without the use of preliminary needs assessments. Needs assessments are used to allocate aid efficiently so that, for example, a particular region will not be flooded with medicines and simultaneously deprived of drinking water. Furthermore, individual countries tended not to coordinate efforts in the days immediately following the disaster. The result was likewise an inefficient allocation of aid in some areas (Bennett et al., 2006). Additionally, there were reports of locals, and especially rebel

groups, becoming dissentious as certain aid materials were notoriously absent while others were present in excess.

The long-term reconstruction effort looked very different from the short-term humanitarian aid effort. After the first few months the focus shifted from providing necessities to rebuilding infrastructure and providing displaced people with permanent housing. Within three months of the disaster “there was palpable evidence of the restoration of some basic services” (Bennett et al., 2006). Children in both Indonesia and Sri Lanka were able to return to school during this timeframe. Many health facilities were partially restored, and a great deal of the renovations produced hospitals that were more modern than those that existed previously. As the number of displaced people was revealed, permanent housing construction became a focal point of the longer-term rebuilding plan. Between January and September of 2005, an average of 1,000 new houses was built each month in Aceh. After September this number would increase to 5,000 per month as previously prohibitive debris was cleared away and new funds were appropriated. The housing effort in Aceh proved semi-successful within six months of the disaster. Roughly 500,000 formerly displaced people had been housed, albeit many were living with host families. Also, another 70,000 were still scattered about the island, with many living in tents or other temporary shelters (Bennett et al., 2006). The housing effort would continue to be one of the main focal points of the rebuilding campaign for the next several years. Construction is still ongoing in parts of Aceh, where the damage to residential communities was especially severe.

According to the OCHA, approximately \$187 million was allocated for the construction of housing, although less than \$50 million was designated for permanent housing. Roughly \$30 million was spent on reviving the large agricultural sectors in Indonesia and Sri Lanka. Much of

this expenditure concentrated on replenishing agricultural inputs such as seed and farming equipment. Spending on coordination and support services totaled \$195 million and was used to build telecommunication systems to buoy the reconstruction effort. An early warning tsunami detection system was installed in the Indian Ocean in hopes of preventing similar, future disasters. Additionally, a large chunk of this money was dedicated to carrying out engineering feasibility studies as construction was sometimes being carried out on potentially unstable land. Infrastructure replacement and economic stimulus spending totaled \$106 million for Indonesia and Sri Lanka. In Sri Lanka funds were used to rebuild damaged fishing vessels, harbors, and other fishing-related capital goods. Additionally, funds were spent to rehabilitate damaged forestry along the Sri Lankan coastline. In Indonesia funds were used to build basic infrastructure such as roads, to install telecommunication equipment such as radio towers, and to teach citizens industrial skills in an effort to revitalize the economy in the long-term. Spending on education totaled \$115 million. In both countries the money was targeted at providing affected children with school supplies and refurbishing damaged school buildings. Human rights issues such as reuniting lost children with their parents and counseling affected children cost about \$41 million. Of the money dedicated to supporting human rights, \$17 million was used to prevent violence, especially against women and children (OCHA, 2010a). This attention to violence was astute and important to note given the proclivity for unrest in Sri Lanka and Aceh in recent history.

Generally, the transition from a humanitarian aid effort to a reconstruction phase was smooth, but unmet funding requirements have hindered reconstruction in some areas. By yearend 2005, relief efforts in Sri Lanka and Aceh had generally moved away from providing humanitarian aid and were focused instead on reconstruction. As evidenced by the large-scale

housing construction effort in Aceh, capital was being mobilized by people who possessed the proper skills and knowhow. In Sri Lanka several thousand small fishing boats had been refurbished within one year of the disaster, and the industry was beginning to recover. However, the reconstruction effort has not been devoid of problems and inefficient or misguided spending. Perhaps the biggest problem still facing Sri Lanka and Aceh is unmet funding that was promised by various governments. According to the OCHA, the actual funding for the entire tsunami relief effort has fallen short of its required amount by roughly \$175 million, and this figure only accounts for projects undertaken by the UN and affiliated organizations. Generally, projects fall victim to underfunding because specific governments withhold promised contributions for various reasons. Aceh has seen underfunding in several areas, notably a \$15 million shortfall in planned communications spending, and the early relief effort saw a \$35 million shortfall in temporary housing funds (OCHA, 2010a).

## **V. Current Economic and Poverty Conditions**

The massive reconstruction campaigns in Sri Lanka and Aceh brought about widespread changes to their economic climates. Some projects have proved rather successful such as the Sri Lankan initiative to refurbish schools in an effort to get children back into the classroom. Others have proved relatively unsuccessful such as the effort to revive the agricultural sector in Aceh. Several initiatives have failed to meet deadlines and are ongoing, and others have yet to receive the amount of funding required for proper completion. As of November 2006, \$2.8 billion had been spent on reconstruction efforts in Aceh, and by November 2007 there were some noticeable macroeconomic improvements. During the same period Sri Lanka showed strong macroeconomic growth, but the coastal towns that were most heavily impacted lagged behind.

Aceh's economy has seen sweeping changes and some improvements since 2005, but many citizens are still relegated to poverty and unemployment. As of 2007, Aceh's poverty rate was estimated at a staggering 26.7%. In urban areas the poverty rate is estimated at 18.7%, and in rural areas it jumps to about 30%. Many people are helplessly trapped in poverty and are lacking the skills necessary to climb the economic ladder. Aceh's weak economy prevents many from finding work, and the unemployment rate as of 2007 stood at 10%. This number probably paints an overly optimistic picture given the number of people who rely on agriculture, which has been a stagnant industry since the tsunami hit. Incidentally, inflation has run rampant since the disaster struck. At yearend 2005, the inflation rate was estimated at an astronomical 41.5%, and it remained over 25% through late 2006 before finally declining to 8.5% in 2007. However, several consumer goods such as food and transportation services witnessed rising prices through the end of 2007 (World Bank, 2007). Apparently, the wide-reaching relief and reconstruction effort has not relieved Aceh of the dismal economic conditions that plagued it prior to the disaster.

Since 2005, Sri Lanka has generally fared better than Aceh in terms of growth; however, the coastal regions that suffered the brunt of the tsunami are still lagging behind the broader economy. In large part this is due to the catastrophic devastation that the fishing industry experienced. As of 2007, Sri Lanka's poverty rate stood at 15.2%, but this was substantially better than the 22.7% rate in 2002. Rural poverty continued to be significantly higher at 15.7% than urban poverty at 6.7%. Sri Lanka also has an estate, or plantation, class, and the poverty level for this group stood at an estimated 32% in 2007. It appears that the urban centers have witnessed the rise of financial institutions in recent years, and this has improved conditions in those areas. Nationally, unemployment has remained stable as it stood at 8% in 2002 and at

7.6% in 2007. In 2007, the unemployment rate along the affected coastal regions was most likely higher than the national rate because some in the fishing industry remained unemployed or underemployed. In 2004, inflation stood at 7.9% nationally, and this would rise to 10.6% in 2005 (The Department of Census & Statistics of Sri Lanka, 2009). The increase was associated with the increased cost of importing as many of the country's eastern ports were destroyed by the tsunami. By 2007, many of these ports had been repaired, and the inflation rate had fallen to 7%. Sri Lanka was able to repair and retool its battered shipping industry relatively quickly and this staved off further economic decline. Furthermore, Colombo, the largest coastal city, resides on the west coast and was relatively unscathed by the tsunami.

## **VI. Lessons Learned from the Responses to the Disaster**

Government aid totaled \$2.2 billion, and aid from charity and corporate based NGO's totaled \$2.4 billion (OCHA, 2010b). These funds were pledged relatively quickly, generally within three weeks following the disaster. Government funds were subject to a degree of red tape and were late to be deployed in some cases. However, several governments were able to compensate by lending naval vessels and military personnel. NGO's deployed their funds more efficiently as they were responsible for a large amount of the initial, direct aid supply. Later in the process they performed much of the reconstruction work, and many organizations should be commended for a timely and concerted effort.

In retrospect, the amount of pledged aid funding was adequate based on the plans drawn up by the UN. The OCHA's *List of Appeal Projects (grouped by sector), with funding status of each* provides a breakdown of reconstruction projects in terms of cost. The projects appear to be adequately funded when compared to the amount of pledged funding. However, the UN should

not have been so naïve when planning long-term reconstruction projects. The pledged funding exceeded the actual funding that the UN would receive from government donations, and many projects suffered from underfunding in subsequent years. NGO's and companies around the world made valuable contributions, and funding from these sources did not fall victim to politics and red tape. NGO's such as the International Red Cross manage their funds as they see fit, and generally do not take orders from political entities. This method has proven more efficient and timely in rushing aid items to needy victims.

As noted previously, UN based reconstruction plans were based on pledged government funds that were subject to uncertain deliveries. Several government, most notably the United States, pledged substantial contributions in the days and weeks following the disaster. Under the current international regulatory structure a pledged governmental contribution does not bind that government to observe its pledge. For various reasons some of these funds never matriculated to the UN, and as a result the reconstruction effort suffered. It makes little sense to plan a series of long-term projects on future cash flows that are not guaranteed. Naïve UN planning in Aceh resulted in a \$34 million shortage in funding for the reconstruction of houses, and as a result several thousand people were forced to live in temporary shelters for extended periods of time (OCHA, 2010b). Some families have yet to see their houses rebuilt, and this is a serious failure of the long-term reconstruction effort.

Regardless of several incidences where governments failed to supply pledged funds, the importance of developed countries to the overall aid effort must not be understated. Twenty-one governments were responsible for 30%, or \$1.8 billion, of the total funding (OCHA, 2010b). Presumably, these were twenty-one wealthy nations, and many also provided naval and military support to the early relief effort. The UN did not have the military capacity to provide an equally



rapid aid response. The less wealthy nations provided a total of \$225 million, which was clearly not enough to mount an equally substantial and influential response. In the future, successful relief efforts will continue to be reliant on the involvement of wealthy nations. For these reasons the wealthier nations must be encouraged to take the lead in all future relief efforts, and the structure of their responses has a lasting impact on the long-term relief effort.

In the weeks following the disaster some areas experienced the misallocation of aid items, and these shortcomings exemplified the importance of a coordinated international response. Chaos often reigns in regions devastated by natural disasters, and this certainly held true in post-tsunami Aceh and coastal Sri Lanka. However, the international aid effort must not fall subject to such disorder in the days and weeks following a large-scale disaster. A well coordinated international response results in more lives saved and in the delivery of a more balanced supply of aid items to all afflicted people. While it is difficult to coordinate individual government responses, the UN must draw up a set of guidelines to address this issue. Quite frankly, the quality of the relief effort in the aftermath of such catastrophes is directly linked to the quality of life for thousands of people. Thus far there is little evidence that the UN has been able to design a systematic coordination plan for any high risk country, and this must change in the future in order to ensure a more effective response.

The early response set the groundwork for the longer-term reconstruction effort. In some regions a lacking early response delayed the start of construction on necessary infrastructure and permanent housing projects. In parts of Aceh debris was not cleared away for several months, so it was impossible to commence rebuilding efforts, and in turn many citizens were forced to live in temporary shelters for extended periods of time or to live with host families. The consequences of this slow response are still being felt by many who have yet to see their homes

rebuilt. Comprehensive early responses can save many lives, tend to injured people more effectively, and remove debris more swiftly in an effort to expedite reconstruction. It is imperative that the UN, NGO's, and individual governments focus on securing and deploying funds quickly.

Currently, technology exists that can provide people in high risk areas with the opportunity to avoid bearing the full brunt of large disasters. The 2004 tsunami spurred the UN to build and implement an early warning tsunami detection system in the Indian Ocean. Installing similar technologies in high risk areas can allow for potential disasters to be predicted with moderate accuracy, hence making relief planning a viable, preemptive strategy. These projects are worthy investments due to their ability to save lives and provide people with a window of time to prepare for the impending disaster.

## **VII. Policy Implications**

Taking into account the scale of the disaster, the subsequent relief efforts were generally successful in both Sri Lanka and Indonesia. Governments, NGO's, and individuals around the world reacted swiftly to the need for funding, and necessities were allocated fairly efficiently. However, some areas did not receive sufficient amounts of certain items, while other areas received excess amounts of certain items. For example, during the early response period Aceh did not receive enough temporary housing supplies such as mattresses and cooking necessities. Many people were consequently rendered homeless or resorted to constructing makeshift tents out of scrap materials. The early response effort must be better coordinated in order to maximize the number of lives saved. A comprehensive early response will also serve to lessen the negative long-term impact of any future, large-scale disaster. It seems reasonable for the OCHA to work

with governments towards building early response plans for some of the highest risk and least able countries. These plans should cater to the geographical structure of the particular area as well as the type of aid items that are generally needed after the most probable disaster types. Such plans would allow the UN to coordinate with individual governments so as to ensure that necessities are provided in proportionate amounts.

Additionally, the long-term response to the tsunami was plagued by uncertainty about the amount of aid funding that would ultimately be available for reconstruction projects. Several governments pledged funding, but only a portion of it was ever made available. This uncertainty is a hindrance to the reconstruction process and must be replaced by a process that ensures the pledged funding will in fact be available when needed. The UN should implement a policy whereby governments are required to pledge an amount that they are willing to provide upfront. At first glance the ability of governments to provide funding upfront may be a concern, but 66% of aid was provided by NGO's. The aid from NGO's proved to be the most efficiently allocated as it was handled by the individual organizations, and they were generally responsible for carrying out the reconstruction work. Additionally, twenty-one governments were responsible for 30%, or \$1.8 billion, of the total funding. This leaves 4%, or \$225 million, of the funding to all other governments, presumably the less wealthy nations (OCHA, 2010b). It seems reasonable to ask the wealthiest nations to provide their funds upfront, and these nations should have little problem doing so. If the lesser developed nations are unable to provide funding upfront then little is being lost in the overall relief effort. This system would enable the UN to design reconstruction projects based on a well-defined budget, thus preventing underfunding, uncompleted projects, and projects of poor quality.

## **VIII. Conclusion**

The 2004 Indian Ocean tsunami was one of the deadliest natural disasters in recent history, and the response to it was also historic for its size, the scope of the projects undertaken, and the number of cooperating nations involved. While the response has been reviewed positively by several organizations, there are five lessons that have arisen from the various mistakes, inefficiencies, and misallocations of aid items and funding. Clearly, the amount of aid is important to any relief effort, and these funds must be employed quickly and efficiently in order to reach needy victims in a timely fashion. The certainty of aid funding is essential to the planning process, and this proved to be one of the greatest shortfalls of the relief effort. Regulations must be drawn up to ensure that the amount of pledged funding will equal the actual amount of funding that the UN receives from governments. Under this revised system the UN will be able to budget reconstruction projects based on a predetermined amount of funding. The role of developed nations in the relief effort became apparent in both Aceh and Sri Lanka. The financial and military clout that these governments lent to the reconstruction process must not be understated, and future relief efforts will continue to rely on the presence of wealthy nations. Coordination among all involved governments and NGO's is vital to the proper allocation of aid items. The misallocation of necessities has very serious and sometimes dire ramifications for the victims. Wealthy nations must work with the UN to build a system by which future aid responses can be carried out promptly and efficiently. The early response was probably the most important part of the relief process as it largely determined the future well-being of thousands of afflicted people. A quick and comprehensive early response can save many lives and allow for a smooth transition to the longer-term reconstruction process. Planning based on geography and likely needs associated with probably disaster types will allow for future early responses to be

undertaken with less wasteful misallocation. These changes should be made immediately so as to create systematic responses in the face of future chaotic disasters.

Policymakers may view these flaws as institutional in nature and corrigible through redesign, but to the thousands of tsunami victims who remain displaced and unemployed a lackluster response has had a very real impact on daily life. Leaving impoverished people to fend for themselves is unacceptable given the technological and engineering capabilities of the developed world. Planning for future relief efforts based on the lessons learned from the 2004 Indian Ocean tsunami will benefit thousands of underprivileged people, and can help to reduce costs associated with future disasters. The world must never forget the downtrodden for they have a place within society and the economy. It is imperative that these people are provided with the best possible opportunity to rebound and prosper.

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